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Acorn Lodge, Barnsley Construction Ecological Management Plan and Ecological Enhancement Management Plan.

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1.0 INTRODUCTION.

- 1.1 In January 2018, Wold Ecology Ltd was commissioned by CAS Healthcare Properties Ltd to write an Ecological Enhancement Management Plan and Construction Ecological Method Statement for land at Acorn Lodge, Upper Sheffield Road, Barnsley (national grid reference SE 35331 05215) in South Yorkshire.
- 1.2 The proposed development involves partial site clearance and the erection of a 20-bedroom brain injury unit with associated infrastructure and landscaping.
- 1.3 An Ecological Enhancement Management Plan and Construction Ecological Management Plan is a requirement of Barnsley Metropolitan Borough Council decision (Ref: 2017/1360), as part of the planning application process. Conditions relating to the ecology of the site state:

13 - Upon commencement of the development full details of the mitigation measures identified in Section 7 of the Extended Phase I Habitat Assessment, including a timetable for their implementation, shall be submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be implemented in accordance with the approved details.
Reason: To conserve and enhance biodiversity in accordance with Core Strategy Policy CSP 36
- 1.4 The purpose of this report is to outline the ecological issues associated with the development site and set out a Method Statement for the site clearance and construction associated with the development, in order to prevent damage to the most important ecological features and prevent any breaches of wildlife law.
- 1.5 This document provides information which is relevant to discharge condition 13 attached to the planning consent granted for the site.
- 1.6 As part of the Construction Ecological Management Plan (CEMP) and Ecological Enhancement Management Plan (EEMP) for the site, all personnel working at the construction site shall be made aware of this Method Statement and its contents.

2.0

AIMS.

- 2.1 It is recognised that planning is an essential component of virtually every human endeavour; conservation and countryside management should be no exception. An EEMP and CEMP was devised to ensure:
- Habitat lost during the works will be replaced – where applicable
 - The site will be enhanced for wildlife where possible
 - Compliance with statutory obligations and policy requirements
- 2.2 The overall aims of this EEMP and CEMP are:
- To ensure development is carried out in an appropriate manner and that features, and species of ecological importance are protected during the preconstruction/enabling and construction phases of the scheme.
 - To enable the delivery of the appropriate management of all semi-natural habitats that are to be retained, enhanced, or created within the completed scheme, to ensure that they continue to deliver benefits for local wildlife, recreation, and visual amenity – where applicable.
 - In addition, this report is also required so that the local authority comply with the Habitats and Species Regulations 2017 and to have regard to the purpose of conserving biodiversity in the exercise of their functions (Natural Environment and Rural Communities (NERC) Act 2006).
- 2.3 Responsibilities
- 2.3.1 The responsibility for carrying out the functions of this EEMP and CEMP will vary throughout the duration of the management period as follows:
- Pre-construction/Enabling Works Phase: All management and maintenance work of all features and species of ecological importance are the responsibility of the Principal Contractor appointed by the Developer and are to be completed by the Principal Contractor for sign-off by the Developer prior to the start of construction.
 - Construction Works Phase: All management and maintenance work of all features and species of ecological importance are the responsibility of the Developer, and are to be continued through to practical completion; and
 - Long-term Management Post-adoption: The responsibility for the management and maintenance works of all features and species of ecological importance postadoption will be the responsibility of the individual property owners, with exception to those areas of public open space that are to be the responsibility of the Private Management Company or similar appointed contractor.
- 2.4 The management scheme detailed within this CEMP and EEMP covers the provision, management, inspection, maintenance, repair, and replacement as necessary, taking into account factors including ecological, landscape, social, wildlife and amenity use for the land.

3.0 GENERAL DESCRIPTION AND BACKGROUND.

- 3.1 Location : Acorn Lodge, Cambrian Oaks, Upper Sheffield Road, Barnsley, S70 4PX
County : South Yorkshire.
OS Grid Reference : SE 35331 05215
- 3.2 The habitats within the Application Site comprise scrub, interspersed with several scattered trees in an area of sub-urban housing. There are no statutory or non-statutory sites within the site boundary.
- 3.3 The Application Site is located on the southern edge of Barnsley, in an urban location. The wider Acorn Lodge site is approximately 1.5ha although the proposed building location (Application Site) is less than 0.5ha; it is immediately surrounded by residential dwellings, a care centre and urban infrastructure. Habitats within the wider area of the Application Site include a cemetery, plantation and semi-natural woodland habitats. The Application Site is surrounded by a small mesh security fencing and brick walls in excess of 2m which prevents dispersal opportunities into the grounds of Acorn Lodge.
- 3.4 Habitats within 2km are dominated by urban habitats including residential dwellings, commercial unit's industrial areas with scattered green belts in the form of river valleys and occasional pastoral agricultural land. Woodland cover in the locality is limited and occurs as small shelterbelts and plantations adjacent to watercourses. Habitat connectivity from the Application Site is poor, with the Application Site not connected to any ecologically valuable habitat; the urban nature of the Application Site also restricts terrestrial dispersal opportunities.
- 3.5 A summary of the surrounding habitat is (radius of < 2km from the site):
- Buildings – farm buildings and residential properties
 - Hedgerow
 - Mature trees and woodland
 - Dearne Valley Park
 - Arable
 - Mature private gardens
 - Ponds and watercourses
 - River Dearne
 - Grazed pasture
- 3.6 A Phase 1 Habitat Survey was undertaken by Wold Ecology Ltd on 29th August 2017. During the site visit, the whole of the Application Site and accessible neighbouring land was examined in detail.

4.0 ECOLOGICAL CONSTRUCTION METHOD STATEMENT.

- 4.1 The CEMP recommends the following measures which should be adopted to ensure potential adverse impacts to wildlife are avoided.

4.2 Birds

- 4.2.1 The applicant is reminded that, under the Wildlife and Countryside Act 1981, as amended (section 1), it is an offence to remove, damage or destroy the nest of any wild bird while that nest is in use or being built. Planning consent for a development does not provide a defence against prosecution under this act.
- 4.2.2 No removal of hedgerows, trees, shrubs or vegetation shall take place between mid-February and mid-September inclusive, unless a competent ecologist has undertaken a careful, detailed check of aforementioned for active birds' nests immediately before the vegetation is cleared and provided written confirmation that no birds will be harmed and/or that there are appropriate measures in place to protect nesting bird interest on site. Any such written confirmation should be submitted to the local planning authority.
- 4.2.3 Thick and overgrown hedgerows are often difficult to inspect fully and removal of a hedges/scrub during the spring/summer period is not recommend.
- 4.2.4 If nesting birds are found during the watching brief, works that will impact upon the nest will need to stop until the young have fledged.

4.3 Mammals (deer, badgers, hedgehogs etc.)

- 4.3.1 During the construction phase of the development, it is necessary to undertake a number of additional measures to safeguard any mammals which may become present within the development site. The following measures are recommended in respect to the Application Site:
- Site personnel are to be made aware of the potential presence of mammals using the Application Site, prior to site works finishing on an evening.
 - Any dangers within the construction site to mammals are to be identified and measures undertaken to minimise any such risk, in relation to the Application Site, this includes the following:
 - Any trenches or deep pits within the development site that are to be left open overnight will be provided with a means of escape should a mammal enter or be covered up. A means of escape could include a roughened plank of wood or similar, placed in the trench as a ramp to the surface. This is particularly important if the trench/pit is liable to fill with water.
 - Any trenches/pits will be inspected each morning to ensure no mammals have become trapped overnight. Should a mammal become trapped in a trench/pit, Wold Ecology should be contacted immediately for further advice.
 - The storage of any chemicals on site will be contained in such a way that they cannot be accessed or knocked over by any commuting mammals.
 - Open pipework greater than 75mm outside diameter should be blanked off at the end of each working day.
 - Care must be taken whilst carrying out vegetation clearance, or strimming. A thorough check of the vegetation prior to removal will help ensure that no hedgehogs are injured or killed during development works. Sleeping

hedgehogs frequently suffer severe injuries from strimmers.

- o Avoid setting fire to piles of vegetation unless they have been turned, checked, or moved immediately prior to burning. Hedgehogs often get killed or injured in fires during vegetation removal and during early November.

5.0 ECOLOGICAL ENHANCEMENT TARGETS.

5.1 Conservation of features

5.1.1 Following field surveys and a desktop study conducted by Wold Ecology during August 2017, the following habitats and species have been targeted for enhancement and protection within this management plan document.

5.1.2 Habitats

- Tree and shrub planting

5.1.3 Species

- Birds
- Bats
- Hedgehog

6.0

HABITAT MANAGEMENT PRESCRIPTIONS.

6.1 Trees

6.1.1 Tree and shrub planting will comprise the following (Saville Landscape Design drawing 246 01B):

PLANTING SCHEDULE						
Shrubs						
Nr	Code	Name	Height (cm)	Container	Habit	Density
38	AjC	Aucuba jap. 'Crotonifolia'	30-40	5L		3 per m2
9	BrS	Brachyglottis senecio 'Sunshine'	40-60	5L	Bushy	2 per m2
15	CAB	Ceanothus 'Autumnal Blue'	40-60	3L	Bushy	2 per m2
3	CtS	Choisya ternata 'Sundance'	60+	20L	Bushy	Refer to plan
28	CsF	Cornus flaviramea	40-60	2L	Bushy	2 per m2
23	CMF	Cornus 'Midwinter Fire'	40-60	2L	Bushy	2 per m2
22	CaS	Cornus 'Sibirica'	40-60	2L	Bushy	2 per m2
23	EIE	Elaeagnus 'Limelight'	30-40	5L	Bushy	3 per m2
10	EuH	Euonymus 'Harlequin'	30-40	5L		4 per m2
9	HeRa	Hebe rakaiensis	30-40	5L		3 per m2
75	HRE	Hebe 'Red Edge'	30-40	5L		3 per m2
7	HyBB	Hydrangea 'Bluebird'	30-40	5L		3 per m2
6	HH	Hypericum 'Hidcote'	40-60	2L		2 per m2
122	LaV	Lavandula 'Vera'	20-30	5L		4 per m2
4	PhP	Phormium Pink Panther'	100-125	15L	Triple Crown	Refer to plan
2	PhYW	Phormium 'Yellow Wave'	100-125	15L	Triple Crown	Refer to plan
7	PSD	Phormium 'Sundowner'	100-125	15L	Triple Crown	Refer to plan
7	SpGM	Spirea 'Goldmound'	30-40	5L		3 per m2
20	Vd	Viburnum davidii	30-40	5L		3 per m2
Herbaceous						
Nr	Code	Name	Height (cm)	Container	Habit	Density
12	BcP	Bergenia cordifolia 'Purpurea'		5L		4 per m2
24	CaEv	Carex 'Evergold'		5L		5 per m2
18	CKF	Calamagrostis 'Karl Foerster'		5L		4 per m2
12	FEB	Festuca 'Elijah Blue'		5L		5 per m2
18	MzML	Miscanthus 'Morning Light'		5L		4 per m2
16	Rud	Rudbeckia 'Goldstrum'		5L		4 per m2
6	SAJ	Sedum 'Matrona'		5L		4 per m2
78	Sti	Stipa tenuissima		5L		5 per m 2
Hedge						
Nr	Code	Name	Height (cm)	Container	Habit	Density
72	PrR	Prunus laurocerasus 'Rotundifolia'	90-120	10L	Bushy	3 per lin m
Native Hedge Mix - Planted in double staggered rows 7 per lin.m						
Nr	Code	Name	Height (cm)	Root	Age	Mix %
81	Cm	Crataegus monogyna	40-60	BR	1+0	40
31	Co	Corylus avellana	40-60	BR	1+1	15
31	Ps	Prunus spinosa	40-60	BR	1+1	15
31	Rc	Rosa canina	60-90	BR	1+1	15
31	Vo	Viburnum opulus	60-90	BR	1+1	15
Trees						
Nr	Code	Name	Height (cm)	Girth	Root	Form
3	BeP	Betula pendula	300-350	10-12	RB	Selected Std
3	PrA	Prunus avium	425-600	14-16	RB	Extra Heavy Std
1	Rhy	Rhus typhina	200-250			Multi-stem

6.1.2 Planting operations shall be carried out in general accordance with the requirements of Sections 7, 8 and 9 of B.S. 4428: 1989 'Recommendations for General Landscape

Operations (Excluding Hard Surfaces)' and detailed in the Detailed Planting Plan (Saville Landscape Design drawing 246 01B).

7.0 SPECIES MANAGEMENT PRESCRIPTIONS.

7.1 Birds

7.1.1 It is concluded that the Application Site is a good habitat for woodland edge and urban bird species with various designations. There is nesting potential for a range of bird families such as finches, warblers, sparrows, thrushes and chats at the site. Several simple management prescriptions can improve the site for breeding bird species.

7.1.2 In order to increase nesting opportunities for birds, 4 Schwegler bird boxes will be erected throughout the site. These boxes will target species of conservation concern. A summary of recommended bird boxes are listed below:

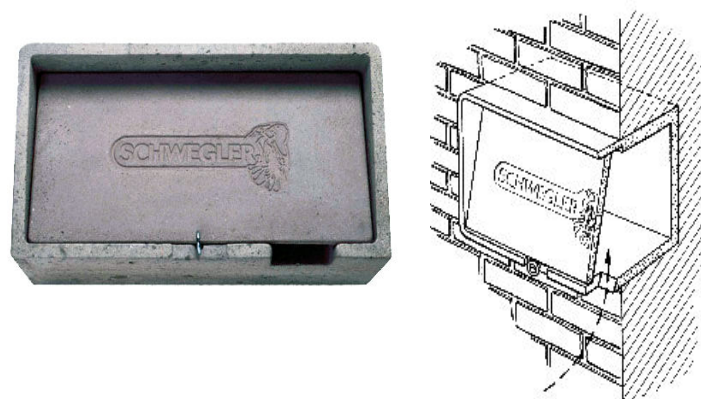
Name	Description	Number
Schwegler Nest Box 1B	Entrance hole 32 mm.	2
Schwegler swift box #25	Brick building box	2

7.1.3 Boxes will be placed so that the entrance does not face the prevailing wind, rain, and strong sunlight. The sector from north to south east should be used, with south facing boxes positioned in more shaded areas. Boxes will be positioned away from the damp side of the tree trunk, usually told by algae, lichen and moss growth. Boxes on trees will also be angled downwards to stop rain blowing into them.

7.1.4 Many species will use boxes at a wide variety of heights however to give the box protection in areas with a lot of human or mammalian predator activity they should be placed approximately 3-4 metres above ground level A clear flight path should be available to and from the nest box. Boxes attached to buildings will be erected close to eaves or gable apexes.

7.1.5 Swifts breed in colonies, so whilst boxes don't have to be placed on the same building as one another, it is recommended that they are situated in clusters of nearby buildings close together. As a general rule, the more boxes which are present increases the likelihood that they will become occupied by a colony. Likelihood of swifts taking them up is greatly increased if swifts already breed within that particular village or town.

Figure 1 – Swift box



7.4 Bats

7.4.1 Lighting

- 7.4.1.1 Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds (A.J Mitchell-Jones 2004).
- 7.4.1.2 The impact on bats can be minimised by the use of low pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.
- 7.4.1.3 Luminaire and light spill accessories - Lighting should be directed to where it is needed, and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres, and shields to direct the light to the intended area only.
- 7.4.1.4 If applicable, the height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low level lighting that is as directional as possible and below 3 lux at ground level. Aim for lighting column of 5m or less, hooded and cowed to prevent light spill, for main lighting columns
- 7.4.1.5 Security lighting power, it is rarely necessary to use a lamp of greater than 2000 lumens (150 W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats. Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor are able to be separately aimed. If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'. The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any bats' roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
- 7.4.1.6 At this site, lights will **not** be mounted where they will shine directly on to bat boxes or the surrounding woodland and tree cover habitat used by foraging and commuting bats.

7.4.2 New bat roosting opportunities

- 7.4.2.1 Assessment of the site in August 2017 (Wold Ecology 2017) noted no roosting opportunities for bats. Consequently, the provision of bat roosting opportunities will enhance the value of the site for bats.
- 7.4.2.2 Two Schwegler 1FR will be sited on the west elevation of the new building. Schwegler Bat Boxes are recommended and well tested boxes. Bat boxes will be erected on south, east or west elevations; 3-5 metres above ground level with free flight paths.

- 7.4.2.3 The **1FR** is an attractive box designed specifically to be fitted on the external wall of a house, barn, or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside along with a rough sawn front panel to enable the bats to land securely.

Figure 2 - Schwegler 1FR Boxes



- 7.4.2.4 The majority of these boxes are self-cleaning as they are designed so that the droppings fall out of the entrance. This reduces the possibility of smell during the summer months. For more information on designs and installation of bat boxes see: www.schwegler-natur.de and www.bct.org.uk.
- 7.4.2.4 Timber treatment will be carried out using Permethryn type chemicals on the Natural England list of approved safe chemicals. New pre-treated timbers i.e. tanalised timber will be allowed to dry thoroughly before use, if applicable. New timbers will be thoroughly brushed with a stiff yard brush to remove any crystalline residues before use.
- A list of Natural England approved paints and timber treatments are available at http://www.naturalengland.org.uk/Images/Bat%20roost%20timber%20treatment_tcm6-10167.pdf

7.5 Hedgehogs

- 7.5.1 Thick shrub bases and areas of rough grassland within the perimeter woodland will offer good hedgehog habitat within the Application Site. Hedgehogs also favour lawned grassland in close proximity to rough grassland for foraging where they can access soil invertebrates on evenings.
- 7.5.2 Two hedgehog houses will be positioned within the margins of the existing woodland. These will provide important breeding and hibernation sites for hedgehogs within the local area. Boxes will be sited out of direct sunlight with the entrance facing away from prevailing winds, in or under thick vegetation. The boxes will be situated away from busy roads or areas of high disturbance.

Figure 3 - example of a hedgehog house



www.hedgehog-rescue.org.uk

- 7.5.3 Providing connectivity between habitats by leaving gaps below fences, gates and walls will allow hedgehogs access in and out of the site.
- 7.5.4 Hedgehogs can roam around 2km a night and hedgehog hog holes should be incorporated into perimeter fences. These small holes will be placed at ground level and will measure 130mm in diameter and enable hedgehogs to roam freely throughout the site, so they can forage for food and find suitable nesting areas.

Locations of mitigation features within the Application Site.



7.6 Timing

Prescribed work	Timing	Comments
Toolbox talk	Before construction works	
Tree felling/vegetation clearance.	Mid September – Mid February	Or carefully checked by a suitably qualified ecologist to confirm no active nests are present during the summer period.
Tree planting.	October to March	
Erection of bat boxes.	Before March 2020	
Erection of bird boxes.	Before April 2020	
Replacement trees.	October to February	Failed trees and hedge plants will be replaced.
On-site inspection	TBC	An ecologist will visit the site and confirm that the mitigation measures have been implemented.

'Bat Mitigation Guidelines'. Mitchell-Jones A.J. (2004). English Nature, Peterborough.

'Bird Monitoring Methods: A manual of techniques for key species'. Gilbert G., Gibbons D.W. & Evans J. 1998, RSPB, Sandy.

'Habitats Directive'. European Commission, 1994;

'Habitat Management for Bats - A guide for land managers, land owners and their advisors'. JNCC, 2001.

'Handbook for Phase 1 Habitat Survey'. JNCC, 1993. HMSO.

'Natural Area Profile'. English Nature, 1997.

'The Population Status of Birds in the UK'. RSPB, 2002.

'The Wildlife and Countryside Act, HMSO'. Anon, 1981.

'Species Conservation Handbook : Badgers', English Nature. 1995.

'The Handbook of the Birds of Europe the Middle East and North Africa, The Birds of the Western Palearctic'. Cramp, S. and Simmons, K.E.L., 1980, (eds.), 3, 4, 5, 6, 7, 8, 9, Oxford University Press.